



Investing in Global Warming



*A Survey of Energy and Environment-related Investments in China
by the World's Second Largest Sovereign Wealth Fund in 2008,
with Recommendations.*

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Note:

This survey assesses the Norway's Government Pension Fund's investments in energy and environment-related companies in mainland China (excl. Hong Kong) as of 2008, in light of best practises for socially responsible investment and Norway's policy goals regarding climate change and China. The survey provides an overview of the investment profile in the areas of energy and environment. However, it does not assess the environmental dimension of the whole investment portfolio, nor the full potential for financially sound investment in China promoting sustainable and low carbon development. For instance, the Norwegian fund invests substantially in the construction and heavy industry sectors, where it would be interesting to assess the extent to which investments are supporting companies concerned with best practice for environmental and social standards.

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Photos (front page)

Top left: Cyclist protecting himself from pollution in Taiyuan, provincial capital of China's coal province Shanxi. Shanxi has an extensive coal industry and high levels of pollution. © WWF / Thomas Haugersveen.

Top right: China's first offshore windmill (wind power generator) was installed south of Shanghai on 1 April 2009. The 3MW mill is 92 meters tall and part of a 100MW offshore wind park to be connected to the grid in 2010. © www.offshorewindchina.com

Bottom left: Chinese windmill blades being prepared for transportation outside the Huiteng production plant in Baoding, Hebei province. Baoding is China's official industrial base for renewable energy development with a booming renewable energy industry serving the Chinese and world market. © WWF / Thomas Haugersveen.

Bottom right: Coal miners at the Tunlan coalmine outside Taiyuan, Shanxi, July 2008. The facility was considered a state of the art Chinese coal facility, and in July 2008 the Norwegian Minister of Development and Environment, Mr. Erik Solheim, and his delegation were given a tour including meetings with the miners. In February 2009, 74 miners died and 114 were injured in a fatal explosion in the mine. © WWF / Rasmus Reinvang.

China for a Global SHIFT

This report is part of WWF's *China for a Global Shift Initiative*. The China for a Global Shift Initiative aims to support China in achieving economic development within the ecological limit of one planet by working with key themes such as energy production, finance, trade and resource management. www.wwfchina.org

Summary

Background

An energy revolution is needed

The International Energy Agency has concluded that an 'energy revolution' is needed to halve greenhouse gas emissions by 2050, as recommended by the UN panel on climate change. In the global power generation sector, the average carbon intensity of energy needs to fall by 90%, from around 500gCO₂/kWh to just 60gCO₂/kWh, by 2050. China's average carbon intensity was 759gCO₂/kWh in 2008. The agency estimates the additional investment needs in clean energy technologies and energy efficiency globally to be 18 times the current level of investment.

Investors have a role to play

By investing in particular companies or projects, the financial sector sends signals to the broader market on the future value of those companies and indirectly influences what the future economy will look like. This makes it important for investors – especially funds with a long-term horizon – to consider the longer-term implications of their investment decisions today in order to contribute to and benefit from a sustainable and prosperous global economy in the future. Institutional asset managers control more than 80% of investment in the world, according to a study from fall 2008.

China – at the centre of the clean energy challenge

China is the world's largest emitter of CO₂ by nation, with annual emissions of more than 6 Gt and with the largest projected future growth under the current development trajectory. 80% of China's carbon dioxide emissions come from burning coal. Coal is also largely responsible for China's high air-pollution levels. The World Bank estimates that 750,000 premature deaths per year in China are caused by respiratory diseases related to air pollution.

The Chinese Government is applying strong policies to boost renewable energy as a way to ensure energy security, reduce levels of pollution and mitigate greenhouse gas emissions. This has already made China a world leader within the field of renewable energy. China is the world's largest producer of hydro-electricity, hosts a booming wind energy sector poised to soon become the world's largest, and is already one of the world's largest producers of solar panels. China has the potential to play a crucial global role in further scaling-up and cutting costs related to renewable energy production, to the benefit of China and the world.

Norway's sovereign wealth fund – a pioneer in responsible fund management

Norway's Government Pension Fund ('the Fund') is based on petroleum revenues and is the world's second largest sovereign wealth fund. The Fund has holdings in more than 7800 companies worth US\$322 billion (NOK 2,275 billion) at the end of 2008, where it held 0.77% of global equity markets. With 1.25 per cent of European stocks, it is said to be the largest stock owner in Europe. The Fund's ownership stake in any given company rarely exceeds 1%, reflecting the Fund's strategy to be a financial rather than strategic investor.

The Fund's ethical guidelines stress that 'sound return in the long term is contingent on sustainable development in the economic, environmental and social sense' and that 'the financial interests of the Fund shall be strengthened by using the Fund's ownership interests to promote such sustainable

development.' The guidelines also stress that the Fund 'should not make investments which constitute an unacceptable risk that the Fund may contribute to unethical acts or omissions, such as [-] severe environmental damages.' The Fund has excluded 33 companies from its investment portfolio with reference to ethical concerns based on the above and has emerged as a global financial force contributing to setting new standards for ethical investments in an unusually open and public way.

The Norwegian government recently announced an increased focus on climate change in the management of the Fund. The Fund shall a) increase dialogue with companies about carbon liabilities and development of environmentally sustainable business models, b) initiate a broad study to assess how the challenges of climate change can affect the financial markets and how investors ought to act in light of this, and c) establish a five-year US\$3 billion (NOK 20 billion) investment program focusing on environment and possibly sustainable growth in emerging markets aiming at investments that can yield 'indisputable environmental benefits.'

Norway holds the view that to avoid dangerous climate change, global temperatures must rise no more than 2°C above pre-industrial level. Norway is committed to become carbon-neutral by 2030 by cutting global emission equivalent to national emissions. Norway is also the world's third largest exporter of petroleum and is strongly committed to developing carbon capture and storage technologies. The government's *China Strategy* (2007) focuses on commercial cooperation and notes that the Norwegian government shall 'seek to integrate environmental, climate change and sustainable development concerns into all Norwegian efforts vis-à-vis China.' Norway's bilateral support to China in the field of environment and energy was in 2008 around US\$7 million (NOK 40m).

Findings

By the end of 2008, the Fund had holdings in 206 companies in mainland China, up from 122 in 2007. Total holdings reached US\$1.53 billion (NOK10.8 billion) in 2008, up from US\$0.9 billion (NOK 6.4 billion) in 2007. The main sectors of investment in 2008 were real estate, telecommunications and banks. China is allocated 0.8% of the Funds investment universe.

Considering the Fund's holdings in Chinese companies providing energy solutions, we see that 11.16% of the Fund's holdings in mainland China were in petroleum companies, 4.14% in coal companies and 0.13% was in one renewable energy company. The Fund had a total of US\$236 million (NOK 1.666 billion) invested in Chinese companies providing energy solutions (not including electricity providers).

The Fund had holdings of US\$63 million (NOK 447m) in six Chinese coal companies, including China's two largest companies China Shenhua Energy and China Coal Energy. China Shenhua Energy's coal production exceeded 150 million tons in 2006, amounting to 6.5% of China's total that year. China Coal Energy's coal production in 2008 exceeded 100 million tons. None of the six companies have the development and implementation of clean coal technologies such as carbon capture and storage as a major focus. The Fund's holdings in Chinese coal companies decreased by 41% from 31.12 2007 to 31.12 2008, which should be seen as a variation reflecting a number of independent investment decisions with no prejudice for or against coal by the managers of the Fund.

The Fund had holdings of US\$164 million (NOK 1,205m) in three Chinese petroleum companies. This included the two huge Chinese companies PetroChina Co Ltd and China Petroleum & Chemical

Corp (Sinopec). The Fund's investments in Chinese petroleum companies increased by 900 per cent from 31.12 2007 to 31.12 2008.

The Sinopec group has a battered environmental reputation. In Gabon, Sinopec has been accused of violating environmental standards while prospecting for oil. Sinopec also has several warnings from China's State Environmental Protection Agency (now Ministry of Environment) for not complying with regulations for pollution control. In 2006, Harvard University withdrew its investments in Sinopec due to the company's involvement in Sudan in cooperation with the state-owned Sudanese oil company Sudapet. The Sudanese government had been found to be complicit in genocide in Darfur by the United Nations.

The Fund had holdings worth US\$2.1 million (NOK 14.7m) in one renewable energy company: JA Solar Holdings Co Ltd. JA Solar develops, manufactures and sells high quality solar photovoltaic products and has a 100MW production line. Countries of export include Germany, South Korea and the United States. The Fund had no holdings in Chinese renewable energy companies at end of 2007.

In the category 'green' (clean tech) companies The Fund had holdings in a total of three companies. In addition to JA Solar, this includes BYD Co Ltd (US\$18.4m) and Tianjin Capital Environmental Protection Group Co Ltd. (US\$0.7m). BYD is a global frontrunner in production of rechargeable batteries and electric cars.

The Fund's total holdings in Indian fossil fuel companies in 2008 were approximately US\$83.6 million (NOK 0.59 billion), while the total holdings in Indian renewable energy companies were US\$4.9 million (NOK 34.5 million). The Fund's holdings were less slanted towards fossil fuels in India than in China in 2008. In China, the Fund invested 118 times more in traditional fossil fuels than in renewable energy, while in India the Fund invested 17 times more in fossil fuels.

Conclusions

In 2008, the Norwegian Fund did not contribute to a shift towards more clean energy in China through its investments. The state-owned Fund hereby made investments which were contrary to its owner's policy goals, which are to contribute to reduce greenhouse gas emissions globally, promote sustainable development in all relations with China and support fossil energy with carbon capture and storage. The Fund's investments also ran counter to the Chinese government's efforts to increase the amount of renewable energy in the energy mix. The Fund did also not contribute to a shift towards more clean energy in India, even though the Fund's bias towards fossil fuels was here much less pronounced than in China. A strong bias for traditional fossil fuel is characteristic of the Fund's investments in energy solutions in the two major emerging economies.

Business as usual scenarios for energy use and production globally holds China as the largest single source of increased emissions which will lead to a temperature increase of more than 2°C in this century with severely detrimental impacts for man and the environment. India is the second largest single source of increased emissions. The Fund's energy-related investments in China and India appear to contradict the Fund's ethical guidelines, which stress that the Fund shall not make investments involving a significant risk that the Fund contributes to 'unethical acts or omissions' such as *inter alia* severe environmental damage.

The Fund did not actively explore and benefit from the rapidly developing Chinese clean tech sector, including the rapidly growing wind and solar energy sectors. The Fund did not invest in Chinese renewable energy locomotives such as windmill producers Goldwind and Sinovel, or solar panel producers Suntech and Yingli Green Energy (two of the largest solar panel exporters in the world). The Fund is clearly under-investing in renewable energy in China compared with its engagement in the coal and petroleum sectors. This likely entails that potential for significant returns on investment is lost for the Norwegian population.

In mainland China and in India, the Fund's energy investments were biased towards traditional forms of fossil fuels at the expense of clean energy – which is to invest in global warming. The Fund's ethical guidelines need to be further supplemented with concrete tools enabling fund managers to make day-to-day investment choices where securing sound financial returns can be combined with investment in companies, thereby contributing to more sustainable development paths.

Main recommendations

The Fund could introduce 'positive screening' of the whole portfolio by sector, enabling diversified engagement and spreading of risk while simultaneously encouraging best practise and innovation within each sector. As long as positive screening is not applied to the whole fund, exclusion of worst-in-class companies and green investment programs will remain as add-ons to a portfolio tending to underpin business as usual and thereby, in many cases, unsustainable business practices and development trajectories.

The Fund could disinvest from energy companies which do not have a clear goal and plan for transforming into a clean energy company. The Fund should also switch investments from fossil fuel companies to renewable energy companies. As the renewable energy sector is much smaller than the fossil fuel sector, the potential impact on the sector will be larger in the renewable energy sector as the share of total investments will be higher. Investing in sound renewable energy companies globally is therefore a good strategy in order to have impact on the future global energy infrastructure.

The Fund could signal that it will consider disclosure of CO₂ emissions through the Carbon Disclosure Project, or any similar recognized instrument adhering to the Greenhouse Gas Protocol Initiative methodology, an important proxy for risk management and a part of companies' obligation to disclose environmental information.

A programme could be set up focussing on sustainable development in emerging economies, consisting of the entire portfolios for China and India – the two crucial economies for realizing a low carbon future. The programme could be implemented by the Fund's office in Shanghai, creating a resource centre for sustainable development investments focussing on China and India's growth potential in the clean tech sector and especially in renewable energy.

Norway's petroleum extraction has already peaked. Norway is a high-cost society with an increasingly knowledge-based economy, and must find niches in order to continue as an actor and be competitive in the global economy. How to handle money responsibly may well be an important expertise on which Norway may capitalize in the future. Norway could continue to use the Fund to develop responsible financial management further, turning it into a key sector for Norway and making Norway's capital Oslo a 'world capital for responsible investment'.

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1. Background

1.1 China's environmental crisis - a global challenge

China's environmental challenges are numerous. Due to centuries of deforestation, over-grazing of grasslands, over-cultivation of croplands and – more recently – urban sprawl, the Gobi Desert is expanding by about 1900 square miles annually; some reports estimate that 25 per cent of China is now desert. Meanwhile, as much as 10 per cent of China's farmland is believed to be polluted. Two-thirds of China's approximately 660 cities have less water than needed, and 100 of these suffer severe shortages. Freshwater pollution is an enormous problem. The Yangtze River, stretching 62300 kilometres from the Tibetan Plateau to Shanghai, receives 40 per cent of the country's sewage – 80 per cent of which is untreated.¹ Government figures show that more than 70 per cent of waterways and 90 per cent of underground water supplies are polluted.²

Air pollution is also a severe problem. The World Bank report 'Cost of Pollution in China' (2007) estimated that 750,000 premature deaths per year are caused by respiratory diseases related to air pollution of which coal-power extraction and generation is a major source.³

China's environmental challenge must also be seen in relation to that posed by climate change. Authoritative reports by the UN and leading scientific publications estimate that a temperature increase in excess of 2°C above pre-industrial levels in this century, will negatively impact ecosystems and hundreds of millions of human beings.⁴ China, with most of its population utilizing freshwater resources depending upon Himalayan glaciers (now melting at an increasing rate) for its annual flows, is a country poised to be severely affected by increased global warming. While water-rich south and east China will probably see more extreme weather events with increasing rains and floods, the water-deprived west and north are poised to become even drier. Both Chinese and international scientists have warned that due to rising sea levels, Shanghai is at risk of becoming submerged by 2050.⁵

The UN Intergovernmental Panel on Climate Change (IPCC) suggests a reduction in Greenhouse Gas Emissions (GHG) of between 50 and 80 per cent by 2050 compared to 1990 levels if we are to avoid global warming of more than 2°C. Moreover, anthropogenic GHG emissions must peak by 2015 in order to have a 50/50 chance of staying below +2°C.

¹ Elisabeth C. Economy: 'The Great Leap Backward? The Costs of China's Environmental Crisis', *Foreign Affairs* September/October 2007, pp. 38–59. Elisabeth C. Economy is Director of Asian Studies at the Council on Foreign Relations and author of the *The River Runs Black: The Environmental Challenge to China's Future* (Cornell University Press, 2005).

² Reported by the South China Morning Post, 01.04.2008.

³ World Bank: *Cost of Pollution in China. Economic estimates of physical damages*, Conference edition, World Bank & State Environmental Protection Administration, 2007. *The True Cost of Coal*, published by Greenpeace, The Energy Foundation and WWF, Beijing 2008.

⁴ The Intergovernmental Panel on Climate Change (IPCC) *Fourth Assessment Report* (2007), the UN *Human Development Report 2007/08*, and C.D.Thomas et al., 2004, Extinction risk from climate change, *Nature*, vol. 427.

⁵ E. Economy (as above).

The International Energy Agency (IEA) has concluded that an 'energy revolution' is needed to halve emissions by 2050.⁶ To take one example, in the global power generation sector, the average carbon intensity of energy needs to fall by nearly 90 per cent by 2050 from around 500gCO₂/kWh to just 60gCO₂/kWh. China's average carbon intensity in 2008 was 759gCO₂/kWh. IEA estimates the additional investment needs in clean energy technologies and energy efficiency *globally* to be 18 times the current level of investment in these areas. In China the change in investments will likely need to be even higher.

China is now the world's largest emitter of CO₂ according to country with annual emissions of more than 6 Gt.⁷ With current trends, China's primary energy demand is projected to more than double between 2005 and 2030.⁸ Projected cumulative investments in energy supply infrastructure have been estimated at 3.7 trillion year-2006 dollars during the period 2006–2030, three quarters of which goes to the power sector. Building a coal power plant with a 40-year lifespan effectively locks emissions for decades. The type of energy solution in which these funds will be invested will therefore decide future Chinese CO₂ emissions to a significant extent and to a large degree the extent to which global warming is averted. Under the current trajectory, the use of CO₂ intensive coal in China is expected to grow rapidly and its share of total primary energy demand will with current trends stay high – at over 60 per cent in 2030.

The Chinese Government recognizes the challenge of climate change and is applying strong policies to boost renewable energy as a way to ensure energy security, reduce levels of pollution and mitigate greenhouse gas emissions. China's goal is to increase energy efficiency by 20 per cent in the period 2006–2010 (the 11th Five-Year plan) and the share of renewable energy in energy output from the current 8% to 15% by 2020 (when energy use will have quadrupled).

The Chinese government's goals and efforts in the field of renewable energy have already made China a world leading nation in the field.⁹ The booming wind energy sector and the export oriented solar energy sector, particularly testify the crucial role China can play in scaling-up and cutting costs related to renewable energy production.¹⁰ Technology transfer, long-term investment schemes in clean energy and environmental technology and further improved policies are needed, however, if China is to release its full potential to produce and apply renewable energy solutions to the benefit of the whole world.¹¹

⁶ International Energy Agency: *Energy Technology Perspectives*, June 2008.

⁷ Netherlands Environmental Assessment Agency: 'China now no. 1 in CO₂ emissions; USA in second position', Press release, 19 June 2007.

⁸ International Energy Agency (IEA): *World Energy Outlook*, 2007.

⁹ The Climate Group: *China's Clean Revolution*, June 2008.

¹⁰ WWF: *Prepared to Ride the Green Dragon?*, December 2008.

¹¹ McKinsey: *China's Green Revolution*, February 2009.

The True Cost of Coal in China

China is the largest consumer of coal in the world and the largest user of coal delivered electricity. China's annual coal demand is 2.6 billion tons and estimated to rise to 3.4 billion by 2020. In spite of significant progress in increasing efficiency and cleaning up the sector over the last decade, the dominant technology in the country is still coal pulverization in lieu of the more advanced and preferred coal gasification.

Eighty per cent of China's carbon dioxide emissions come from burning coal. Coal burning is also responsible for the high air pollution levels. Coal was responsible for 70 per cent of soot, 85 per cent of SO₂, and 67 per cent of NO_x emitted in China in 2007, according to official statistics. Pollution not only contaminates the water and air but also is the leading cause of death in China; more than 750,000 die each year from air pollution-related illnesses.

In addition, 30% of the land in China is affected by coal-related acid deposition. By 2007, China's coal industry had left behind 3.6 Giga tons of gangue accounting for 40% of solid waste in the country. The total sink area of coal mines surpasses 70,000 hectares.

The report *The True Cost of Coal* estimates that the external and environment-related cost of production and use of coal in China in 2007 was RMB 1,745 billion (US\$229 billion), equivalent to 7.1% of China's GDP the same year. The report estimates the net social benefit from internalizing costs of coal into the price of coal as RMB 940 billion (US\$123 billion).

The New York Times recently reported that on average nine coal miners a day died in China in 2008 – 40 times that of the USA, according to China's State Administration of Work Safety. Small mines, legal and illegal, accounted for three-fourths of the deaths (but only a third of the production). In the legal and larger mines of the more established coal sector, more than two coal miners died every day in 2008 – more than 820 people.

In February 2009, 74 miners died and 114 were injured in a deadly explosion in the Tunlan Coal Mine in Shanxi Province, the coal mining heartland of China. The mine is run by the Shanxi Coking Coal Group, one of China's largest producers of coking coal which is listed on the Shanghai Stock Exchange. The facility was considered a state of the art Chinese coal mine, and in July 2008 Norwegian Minister of Development and Environment, Mr. Erik Solheim, and his delegation were given a tour of the facility including meetings with the miners.



Coal miners at Tunlan Coal Mine, Shanxi Province, July 2008. Left: Waiting for visit by Norwegian minister Erik Solheim. Right: Checking in gear at the end of a shift. © WWF / Rasmus Reinvang

The True Cost of Coal in China (*continued*)

In January 2009, Zhao Tiechui, a senior official in charge of coalmine supervision, stated to the New York Times that the coal industry 'sees the most frequent covering-up of accidents.' Mining is lucrative for those at the top, the New York Times article noted, pointing out that the owners of China's large mining companies are among China's wealthiest people.

Beijing is reforming several of its coal-mining facilities to improve safety, quality and efficiency. The Chinese government also plans to modernize its electric grid and coal transportation railways. Further, Chinese coal mines are becoming safer. Deputy administrator of the Work Safety Agency, Huang Yi, explained to the New York Times recently that stricter scrutiny, regulations and the closure of 12,000 mines has cut the death rate by three-fourths since 2002.

But Hu Xingdou, an economics professor at the Beijing Institute of Technology, argues that Beijing's top-down approach can only do so much to make local officials more accountable. 'We don't have the grass-roots democracy; we don't have independent labor unions; we don't have checks and balances; we don't have any system of official accountability,' Mr. Hu pointed out to the New York Times.

Sources

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New York Times: *'Chinese Mine Disaster Ends with 74 Dead'*, New York Times, 24 February, 2009.

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1.2 Norway, China and goals for promoting sustainable development

Norwegian foreign policy has increasingly focused on China in recent years. In 2007 Norway's Government Pension Fund ('the Fund') opened an office in Shanghai, to increase investments in the rapidly growing Chinese market. One of the main issues in the Sino-Norwegian relationship over the last decade has been the environment, and high-level political meetings are held on a regular basis. An ambitious Norwegian policy towards China was announced by Norwegian prime minister Jens Stoltenberg at Tsinghua University in 2007. The Norwegian prime minister here declared that 'We stand on the threshold of a new, green economy', and announced that 'Together, we must explore every technological and business opportunity that promotes change'¹²

A 'China Strategy' was published later the same year focussing on increased commercial cooperation and noting that the Norwegian government shall 'seek to integrate environmental, climate change and sustainable development concern into all Norwegian efforts vis-à-vis China.'¹³ The strategy document states that: 'China is also the world's third largest energy producer, and most of its consumption is covered by domestic production, which is mainly coal-based.' The strategy lists coal-based power production as one of the five major challenges of China's environmental policy, and notes as a cause for concern that approximately one new coal powered plant is inaugurated in China every week. Norway's bilateral support to China in the field of environment and energy in 2008 was around NOK 40 million (US\$7 million).¹⁴

¹² Speech by Norwegian PM Jens Stoltenberg at Tsinghua University, Beijing, 27 March 2007.

¹³ Norwegian Ministry of Foreign Affairs: *The Government's China Strategy*, Oslo, August 2007.

¹⁴ Source: The Norwegian Embassy in Beijing.

1.3 Norway's Government Pension Fund

Norway's Government Pension Fund (the Fund) is the largest pension fund in Europe and the second largest sovereign wealth fund in the world. It is similar in size to the California public-employees pension fund (CalPERS), the largest public pension fund in the United States. The Fund has holdings in more than 7800 companies worth US\$322 billion (NOK 2,275 billion)¹⁵ at the end of 2008 when it held 0.77% of global equity markets. With 1.25 per cent of European stocks, it is said to be the largest stock owner in Europe. The Fund's ownership stake in any given company rarely exceeds 1 %, as a reflection of the Fund's strategy of remaining a financial rather than strategic investor.¹⁶

The Fund is technically a sovereign wealth fund (SWF) and not a pension fund in the conventional sense, as it is based on financial assets from petroleum income and not pension revenues. The capital is invested in non-Norwegian financial instruments (bonds, equities, money market instruments and derivatives), and in 42 developed and emerging equity markets and 31 currencies for fixed income investments. The Fund was established in 1990 primarily as an instrument to provide future national income for Norway when oil revenues decline. The Fund has investments all over the world and offices in Oslo, London, New York and Shanghai.

The global financial crisis in 2008 presented major challenges to all parts of the portfolio of the Fund. The results for the year were the weakest in the Fund's history. There was a negative return in international currency of 23.3 per cent, equivalent to US\$112 billion (NOK 633 billion) over the year. The market value of the Fund was NOK 2,275 billion at the end of 2008, up from NOK 2,019 billion a year earlier. Growth was secured by a record-high inflow of new capital into the Fund of NOK 0.38 billion, invested entirely in global equity markets.

In 2004, the Norwegian Fund established an advisory council on ethics and developed a set of ethical guidelines for the Fund (ref. Appendix 1). The ethical guidelines of the Fund are based on two premises:

- 'The Government Pension Fund - Global is an instrument for ensuring that a reasonable portion of the country's petroleum wealth benefits future generations. The financial wealth must be managed so as to generate a sound return in the long term, contingent upon sustainable development in the economic, environmental and social sense. The financial interests of the Fund shall be strengthened by using the Fund's ownership interests to promote such sustainable development.'
- 'The Government Pension Fund - Global should not make investments which constitute an unacceptable risk that the Fund may contribute to unethical acts or omissions, such as violations of fundamental humanitarian principles, serious violations of human rights, gross corruption or severe environmental damage.'

¹⁵ In this survey the average exchange rate of NOK 7.06 for 1 US\$ of 31 December 2008 is consistently applied when providing US\$ figures for the size of the Fund's holdings in 2008.

¹⁶ The institutional framework, the provisions for the management of the Fund, the investment strategy and the ethical guidelines of the Fund are available on Norges Bank Investment Management's website [www.nbim.no \(http://www.nbim.no/templates/article_69365.aspx\)](http://www.nbim.no/templates/article_69365.aspx).

The Fund has excluded 33 companies from its investment portfolio with reference to ethical concerns based on the above. Among the first companies to run foul of Norway's standards were makers of cluster bombs and nuclear weapons or related components – a list that includes Boeing and Lockheed Martin. The Fund has also excluded Wal-Mart Stores, alleging that the retailer was guilty of tolerating child-labour violations by its suppliers in the developing world and obstructing unions at home. One Chinese company has been excluded, Dongfeng Motor Group Co Ltd, for providing military vehicles to the Myanmar government.¹⁷ Several mining companies have been excluded from the portfolio for environmental reasons. The Norwegian Fund has quietly emerged as a global financial force contributing to setting new standards for ethical investments,¹⁸ 'in an unusually open and public way' (New York Times 2007).¹⁹

1.4 The Fund compared with peers

The financial sector has an important role to play in the global economy in terms of where they channel their funds. By investing in particular companies or projects, the financial sector sends signals to the broader market on the future value of those companies and indirectly influences what the future economy will look like. This makes it important for the financial sector – and especially pension funds with a long-term horizon – to consider the longer-term implications of their investment decisions today in order to contribute to a sustainable and prosperous global economy in the future. Early fall 2008, institutional asset managers controlled an estimated 86% of investment in the world.²⁰

As the driving force behind the global market place, large institutional investors such as sovereign wealth funds must be aware of how climate change may affect investment value. It will be important to identify those companies which are leaders in a low carbon future, and also to encourage companies to move in the right direction. In so doing, sovereign wealth funds and pension funds will secure the investment potential in a global economy adapting to 21st Century environmental limitations and contribute to ensuring environmental stability important for a well-functioning global economy.

A study by WWF and financial analysts Innovest points out that the Fund lags behind peers such as the Dutch pension fund ABP, and CalPERS concerning application of instruments for socially responsible investments. There are two main reasons for this. First of all, the Fund does not apply positive screening ('best-in-class') by sector in its investment portfolio. Positive screening allows for differentiated investments in a wide range of sectors, but uses instruments to ensure that investments are targeted towards those companies with high environmental and social standards in each sector. In this way the more ethically-managed companies are 'rewarded' with investment, something which promotes best practises in the sector. This also provides an ethical 'filter' on the whole range of companies in the portfolio, allowing for a cost-effective engagement probably providing broader impact than is achieved by publicly excluding a few selected companies following a time-consuming investigation.

¹⁷ Norway supports the US and EU embargo on sales of military equipment for Myanmar.

¹⁸ See also NBIM's website under 'Socially responsible investments/history'.

¹⁹ Mark Landler: 'Norway keeps nest egg from some US companies', *New York Times* May 4, 2007.

²⁰ Wong, K. et al.: *Fund Management in the 21st Century: The role of sovereign wealth funds in contributing to a low carbon future*, WWF and Innovest 2008.

Selected pension funds and sovereign wealth funds – application of tools for socially responsible investment as of September 2008								
	Size (US\$ bn)	Launch Date	Source of Capital	Negative Screening	Positive Screening	Engage Activity	Environ- Related Invest	Reporting on SRI activities
ABP (Netherlands)	311	1922	Contributions	Yes	Yes	Yes	Yes	Yes
CalPERS	230	1932	Contributions	Yes	Yes	Yes	Yes	Yes
UK Environment Agency Pension Fund	2	1993	Contributions	Yes	Yes	Yes	Yes	Yes
UK Universities Superannuation Scheme	60	1975	Contributions	No	Yes	Yes	No	Yes
New Zealand Superannuation Fund	13.8	2003	Non-Comm	Yes	No	Yes	No	Yes
Norwegian Pension Fund Global	396	1990	Oil	Yes	No	Yes	No	Yes
Chinese Investment Corporation	200	2007	Non-Comm	Yes	No	No	Yes	No
Kuwait Investment Authority	264	1953	Oil	Yes	No	No	No	No
GIC (Singapore)	330	1981	Non-Comm	No	No	No	No	No
Stabilization Fund of the Russian Federation	32	2007	Oil	No	No	No	No	No
Abu Dhabi Investment Authority	875	1976	Oil	No	No	N/A	No	No
<i>Source: 'Fund Management in the 21st Century: The role of sovereign wealth funds in contributing to a low carbon future', WWF & Innovest, September 2008. Note: Numbers for the size of the Funds are from September 2008.</i>								

The second reason why the Fund lags behind other pension funds in application of socially responsible investments, is that by 2008 the Fund had not set up any thematic fund targeting investments in the clean tech sector. CalPERS is one example of a pension fund which has demonstrated that there is a niche where investing in green companies and securing sound return on investments meet. Such investments are crucial to drive increased commercialisation of environmentally sustainable solutions such as renewable energy.

The Rainforest Foundation has pointed out the Fund almost doubled its investment between 2007 and 2008 (reaching more than US\$1b) in six companies²¹ deeply involved in clearing the world's rainforests – crucial carbon sinks for mitigating global warming. This stands in contrast to the announcement by the Norwegian government at the conference of the parties meeting of the UN framework convention on climate change in Bali in December 2007, whereby Norway will allocate ca. US\$450 million (NOK 3 billion) over the state budget in order to preserve the world's rainforests as a measure to combat climate change. In fact, the Fund invested far more in these companies than the Norwegian government has pledged to allocate over the state budget to protect the rainforest. Such a dichotomy would possibly have been avoided if the Fund had applied positive screening to its investment universe.²²

1.5 The Fund announces new efforts to address climate change

April 2009, the Norwegian government presented a White Paper outlining the plans for a revision of the guidelines for the Fund.²³ The government noted that 'as a broadly diversified and long-term investor, the Fund has an interest in avoiding negative economic repercussions of climate change.'²⁴ The government also presented new measures in order to strengthen the Fund's engagement to contribute to environmentally sustainable development. These measures include the following:

- Preparation of an 'expectations document' within the environmental area, outlining the important negative environmental trends and approaches to counteract these while running a business. This document will be used in internal dialogue with the companies in the Fund's portfolio to increase awareness and push for development of environmentally sustainable business models.
- Initiation of a broad study to assess how the challenges of climate change can affect the financial markets and how investors ought to act in light of this based on the presumption that liabilities related to climate change are currently not fully factored into financial markets.
- Establishment of an environmental program aimed at investments that can be expected to yield 'indisputable environmental benefits', such as climate-friendly energy, improving energy efficiency, carbon capture and storage, water technology and management of waste and pollution.

The Norwegian minister of finance, Ms. Kristin Halvorsen, noted: 'We are planning that the entire amount for the environmental programme and a possible investment programme aimed at sustainable growth in emerging markets will be around NOK 20 billion [ca. US\$3b], invested over a five-year period. This will entail substantial investment in terms of both the size of the markets and investment

²¹ The companies are: Timber companies Samling (Malaysia) and Olam (Singapore), palm oil company Wilmar International (Singapore) and the three petroleum companies Repsol (Spain), Occidental (USA) and Chevron (USA). The Rainforest Foundation report is available (in Norwegian) on www.regnskog.no

²² On a macroeconomic level there is a corresponding dichotomy between Norwegian policy goals for global sustainable development (including keeping global warming below +2°C in this century) and the fact that large parts of Norway's wealth are generated by extracting and selling fossil fuels, the use of which is a primary cause of global warming. The Norwegian population's consumption level is also several times higher than an equitable and sustainable per capita level of consumption of resources (ref. *Living Planet Report 2008*, WWF et al. 2008). Consistency with its political goals for sustainability would not only entail that Norway invests in drivers for sustainable development abroad, but also that the country realizes a national development model that is compatible with equitable global sustainable development.

²³ Norwegian Ministry of Finance: *Report no. 20 to the Storting (2008–2009) on the Management of the Government Pension Fund in 2008*. The Second Stoltenberg Government.

²⁴ Norwegian Ministry of Finance, press release 32 and 33/2009.

in other comparable funds internationally.' She also noted that before the investments can start, a number of matters need to be clarified.

Investors under the new programme will reportedly be allowed to invest with a lower margin of return on investment in the near future in order for the Fund to be able to assist growth and increasing commercialization of emerging environmental technologies. Investors will also be allowed to invest in companies that are not yet listed in order to allow for early entry into promising companies that may gain a substantial market share in a future economy where environmental dimensions are supposedly increasingly important for companies.

Norges Bank, Norway's national bank, which is responsible for the management of the Fund, has expressed scepticism to the government's plans. The director has stated that political goals should rather be followed up by allocations over the state budget than by politically motivated guidelines for the financial management of Norway's sovereign wealth fund.²⁵

Positive screening and clean tech funds - strategies for socially responsible investment

Many social investors employ *positive screening* to select companies with positive attributes for investment. The most popular form of positive screening is '*best-in-class*', where stocks are selected within each sector of a given index, thereby retaining sector balance within the investment universe. The companies are selected on their Environmental and Social Governance (ESG) performance relative to their peers. Motivated by a desire to set standards for, and to improve, corporate social and environmental performance, social investors use such positive screening techniques to identify companies with competitive advantages over their peers, many of which may be intangible in nature. Positive screening also provides a means for regular monitoring of companies that are chosen for inclusion within a portfolio.

Due to its systematic approach in covering a large number of companies and clarity of practice, positive screening is often considered a more accountable strategy than engagement. Positive screening not only allows investors to identify which companies perform better on ESG issues, it is also a tool to select those companies to engage with. As is the case for negative screening, some investors believe that positive screening reduces investment diversification and therefore contradicts the obligations imposed by fiduciary duty. However, best-in-class selection, specifically addresses this criticism by maintaining sector balance.

The public's broader awareness of climate change and its impacts have supported increased pioneer screening and demand for the creation of new Socially Responsible Investment (SRI) products with a specific environmental focus. Such environmental funds differ from traditional SRI funds in that they apply only an environmental screen to the companies in which they invest. Climate change, especially, has become a very popular theme for these funds. In 2007–2008 alone, over ten 'climate change funds' have been launched with many coming from mainstream financial institutions such as HSBC and Deutsche Bank. The trend for 'green' investment is also spreading to emerging markets.

²⁵ Source: 'Gjedrem skeptisk til Halvorsens planer', *Dagens Næringsliv* 4 April, 2009.

Positive screening and clean tech funds - strategies for socially responsible investment (continued)

Furthermore, some of the biggest and most respected names in the banking, private equity, institutional, and corporate arenas have made significant investments or commitments to clean tech businesses and markets in recent years. All of these players forecast clean tech in some shape or form to be one of the most important industries of the 21st century. Several public pension funds are leading the SRI field and incorporating these best practices into their investments, which reflect the full range of innovative ways in which ESG factors are being used in investment decisions. These include award-winning funds that have delivered out-performance against their benchmark. Funds such as ABP, CalPERS, the UK Environment Agency and the UK University Superannuation Scheme have moved beyond negative screening in stock selection and some have even setup thematic environmental funds.

While institutional investor awareness of climate risk has increased dramatically through various initiatives, only a handful has moved beyond rhetoric and shareholder resolutions to take concrete investment action. Innovest currently estimates that far less than 0.1% of the Carbon Disclosure Project signatories' US\$57 trillion+ in assets is currently guided by any investment strategy which explicitly and systematically takes climate risk into account. Even fewer have guidelines that see climate mitigation as an *opportunity* and select companies that are potential winners in a low carbon economy. Yet, current policy recommendations are pushing for strong and early action from both government and private sectors in order to reduce greenhouse gas emissions and limit costs. As a result, significant upside opportunities exist for investors willing to branch out and be first-movers in addressing the climate risk and opportunity challenge.

Extracts from *Fund Management in the 21st Century. The role of sovereign wealth funds in contributing to a low carbon future.*
WWF & Innovest, September 2008.

2. The Fund's energy and environment holdings in China 2008

By the end of 2008, the Norwegian Pension Fund Global had holdings in 206 companies in mainland China, up from 122 in 2007.²⁶ Total investments increased from US\$1.1 billion (NOK 6.4 billion) in 2007 to US\$1.53 billion (NOK 10.8 billion) in 2008. China is allocated 0.8% of the Funds investment universe. The main sectors of investment in 2008 were real estate, telecommunications and banks. As the Fund grows it will increase investments in China.

This survey briefly examines the nature of the companies in the portfolio related to energy and environment at the end of 2008. It should be emphasized that the companies described in the survey have not undergone in-depth analysis. The survey reports the main activity of the listed companies including instances where companies have drawn negative public attention in application of environmental and social standards.

Chinese electricity companies are not included in this survey as the picture is complex. On the one hand, almost all of these companies rely mainly on coal for electricity generation and are often engaged in the coal industry in different ways. On the other hand, Chinese electricity companies are now legally required to provide a certain percentage of renewable energy. This has spurred an emerging diversification where electricity companies often engage in development of typically wind energy projects in order to meet their obligations. For this reason, in this study the Fund's investments in four coal-based Chinese electricity companies are considered neither good nor bad in terms of promoting clean energy in China.

A brief presentation of the energy and environment-related companies follows with the Fund's holdings as of 31 December 2008.²⁷ The first number listed in front of the company name refers to the number in the Fund company list (see Appendix 1). The amount listed with the value in Norwegian kroner (NOK) is the market value of the Fund's holdings in the company by the end of 2008. All trends are calculated based on the Fund's holdings in NOK.

2.1 The Funds coal related holdings

53. China Shenhua Energy Co. Ltd. 238,227,159 NOK

China Shenhua Energy is China's largest integrated coal-based energy company and one of the largest coal companies in the world. In 2006, the company's raw coal production amounted to 150 million tons - 6.3% of China's total.

28. China Coal Energy Co., 108,188,561 NOK

The China Coal Energy Company is the second largest state-owned coal mining enterprise in Mainland China, and the third largest coal mining enterprise in the world. The production of coal exceeded 100 million tons in 2008.

²⁶ *Government Pension Fund – Global. Holding of equities at 31 December 2008*, NBIM Norges Bank Investment Management, Annual report 2008. There are also substantial investments listed on the Hong Kong stock exchange, which are not included in this survey.

²⁷ *Government Pension Fund – Global. Holding of equities at 31 December 2008*, NBIM Norges Bank Investment Management, Annual report 2008.

108. Inner Mongolia Yitai Coal Company Ltd., 25,890,644 NOK

The Company's principal activities are mining, distributing and selling of coal and coal processed products. The coal produced and marketed by the Group is an energy source for power industry, metallurgical industry, coaling industry, chemical industry, civil use and building material and transportation lines.

116. Kailuan Clean Coal Co Ltd., 20,984,599 NOK

The main product produced by the company is 'clean fat coal' of Grade 8-12, which is low in phosphorus and high in ash fusibility. The reference to 'clean coal' refers to the coal quality and not to the application of clean coal technology. February 2009, the company announced that it has changed its name to Kailuan Energy Chemical Co., Ltd.

159. Shanxi Lu'an Environmental Energy Development Co Ltd., 14,361,484 NOK

The company is a chemical and energy enterprise specializing in coal and combined industries such as coal-power-chemical, coal-coke-chemical and coal-oil-chemical industrial activities.

193. Yanzhou Coal Mining Co Ltd., 39,707,261 NOK

The Company is mainly engaged in coal production, preparation and processing, marketing, and railway transportation.

Looking at investments in the Chinese coal industry it is objective to distinguish between traditional coal companies and coal companies that are developing and implementing different clean coal solutions (such as carbon capture and storage) as a core activity.²⁸ Of the six companies in which the Fund had holdings at the end of 2008, none had a major focus on clean coal.²⁹

The total value of the Norwegian Government Pension Fund holdings in Chinese coal companies in 2008 were NOK 447,360,072 (US\$63.4 million). This is a 41% decrease since 31.12 2007, when the Fund had coal-related holdings worth NOK 756,933,000 (US\$140 million).³⁰ The reduction in investments in coal does not represent a new policy by the Norwegian government or trend, but should be seen as a variation reflecting a number of independent investment decisions with no prejudice for or against coal by the managers of the Fund.

²⁸ There are several clean coal initiatives in China, often backed by Australia and the U.S. Examples of Chinese companies focusing on clean coal technologies are China Huaneng Group, Shanxi Poar Group, Sino-Mongolia International Railroad Systems Co. Ltd. and Tianjin Bohai Chemicals Industrial Co. Ltd.

²⁹ GreenGen is China's centerpiece initiative to advance near-zero emissions coal-fueled power generation with hydrogen production and carbon capture and storage. As a prestigious project strongly supported by the Chinese Government, the joint venture comprises China's largest electric utilities and coal companies. The China Huaneng Group holds 51% of the total investment, while seven other Chinese companies (incl. China Shenhua where the Fund has holdings) hold 7 per cent each.

³⁰ This 2007 amount excludes electricity companies involved in coal and to some extent in renewable energy. Including three electricity companies, the 2007 amount would be NOK 784,170,000 which was used in the survey *Norway's SWF in China: Investing in Global Warming*, WWF 2008. Source of 2007 numbers: *Government Pension Fund – Global Holding of equities at 31 December 2007*, NBIM Norges Bank Investment Management, Annual report 2007.

“The speed and scale of China’s expanding coal use has brought a new urgency to deploying the full range of clean coal technologies. [-] New technologies are needed worldwide. China’s role in developing them is critical.”

Nobuo Tanaka, executive director, International Energy Agency.

”We know that CO2 capture and storage is not fully demonstrated and is currently too expensive but we believe that China has the opportunity to lead in the development of new clean coal technologies, such as carbon dioxide capture and storage.”

Brian Ricketts, coal analyst, International Energy Agency.

Quotes from the launch of IEA’s report *Cleaner Coal in China*, reported in China Daily, 24 April 2009.

2.2 The Fund’s other fossil fuel-related holdings

In addition to the six coal companies there were four other companies engaged in fossil fuel production, refinement and distribution in the Fund’s portfolio at end of 2008:

49. China Petroleum & Chemical Corp (Sinopec), 316,852,145 NOK

The China Petroleum and Chemical Corporation (Sinopec) is one of the major petroleum companies in China. Sinopec’s business includes oil and gas exploration, refining, and marketing; production and sales of petrochemicals and chemical products; storage and pipeline transportation of crude oil and natural gas; import, export and import/export agency business of crude oil, natural gas, refined oil products, petrochemicals, and other chemicals. In 2008, it was ranked 16th by Fortune Global 500.

165. Sinopec Shanghai Petrochemical Co Ltd., 21,129,064 NOK

In 2007, Sinopec Shanghai Petrochemical – a unit of China Petroleum & Chemical Corporation – processed 9,073,200 tons of crude oil and produced 645,900 tons of gasoline, 2,929,100 tons of diesel, 695,700 tons of jet fuel, 869,400 tons of ethylene, 455,900 tons of propylene, 1,019,000 tons of synthetic resins, 532,400 tons of synthetic fiber monomers, 631,900 tons of synthetic fiber polymers, 307,900 tons of synthetic fibers, and generated in total 3,043 GWh electricity.

The Sinopec group has a battered environmental reputation and is also involved in a controversial cooperation with the Sudanese government. In Gabon, Sinopec was accused of dynamiting and polluting the Loango National Park and of ignoring standards set by Gabon’s environment and parks administration while prospecting for oil.³¹ Sinopec has also received several warnings from China’s State Environmental Protection Agency (since 2008 China’s Ministry of Environment) for not complying with regulations for pollution control.³² In March, 2006, Harvard University

³¹ After signing an evaluation deal with Gabon in 2004, Sinopec prospected for oil in the Loango National Park. Sinopec was the critique was raised by an investigating team from the Wildlife Conservation Society. Gabon’s foreign minister at the time, Emile Doumba, referred to Sinopec’s actions as ‘unacceptable’. Source: Agence France Presse: ‘China’s Sinopec provokes conservation uproar in Gabon’, Sept. 28, 2006.

³² In 2007, China’s State Environmental Protection Agency warned Sinopec to stop operations at one of its oilfields due to chronic river pollution. Zhongyuan Oilfields Petrochemical Company, a unit of Sinopec, had failed to meet waste water treatment requirements. It was ordered to pay a pollution fine and operations had to be halted. (Source:

withdrew its investments in Sinopec due to the company's involvement in the mining of oil in Sudan in a consortium including Sudapet (the Sudanese state-owned oil company). Harvard University stated that its move was prompted because the Sudanese government had been found to be complicit in genocide in the Darfur region by the United Nations.³³

131. PetroChina Co Ltd., 826,890,437 NOK

PetroChina is one of China's largest companies in terms of revenue and is the dominant producer and distributor in the oil and gas industry. It is also one of the largest oil companies in the world. The business of the company covers all key sectors in the petroleum and petrochemical industry, from exploration and production of crude oil and natural gas to refining, chemicals, pipelining and marketing.

48. China Oil Field Services Ltd., 40,091,635 NOK

China Oilfield Services Limited (COSL) is a leading comprehensive offshore solution provider of integrated oilfield services in China. Core services are drilling services, well services, marine support and transportation services and geophysical services, which cover each phase of oil and gas exploration, development and production. In 2008 COSL completed acquisition of Awilco Offshore ASA of Norway, as part of its expansion into international markets.

The total value of the Fund's holdings in four Chinese petroleum related companies in 2008 was NOK 1,204,963,281 (US\$170.7m), an increase of 900% from NOK 133,658,000 (US\$24.7m) in 2007.³⁴

This makes the total value of the Norwegian fund's holdings in fossil fuel related companies in China in 2008 to NOK 1,652,323,353 (US\$234 million). This is almost double (1.9 times) the level of investment in 2007, where the Fund's holdings in fossil fuel companies amounted to NOK 890,591,000 (US\$152 million).

2.3 The Fund's holdings in renewable energy companies

On the list of holdings in 204 China mainland companies there is one renewable energy company. The company is:

109. JA Solar Holdings Co Ltd., 14,674,417 NOK

JA Solar Holdings Co. Ltd. (JA Solar) develops, manufactures and sells high quality solar photovoltaic products. It has a 100MW production line. Countries of export include Germany, Sweden, Spain, South Korea and the United States.

Reuters: 'Sinopec punished for water pollution', 4 July, 2007.) In February 2008, Guangdong Provincial Environment Bureau issued a 'red sign' warning to 19 companies, including Sinopec Guangzhou. By the bureau's standard, companies that have been involved in excessive emissions or caused serious environmental pollution accidents will be given the red sign warning and be placed under strict supervision. (Source: *China CSR: 'Sinopec Guangzhou Receives Warning For Pollution'*, February 5, 2008. www.chinacsr.com/en).

³³ 'Statement on Sinopec divestment', *Harvard University Gazette*, 23 March, 2006. Lawrence H. Summers, professor of economics, then Harvard President and currently Director of the White House National Economic Council stated: 'This is the right thing to do in light of the ongoing events in Darfur. Harvard rightly maintains a presumption against divestitures but this situation is extraordinary.'

³⁴ *Government Pension Fund – Global Holding of equities at 31 December 2008*, NBIM Norges Bank Investment Management, Annual report 2008.

99.9% of the Fund's holdings in energy companies in China in 2008 were in coal and petroleum companies, and only 0.1% was in renewable energy.

Norway's Sovereign Wealth Fund in China 2008: Holdings in Energy Companies*		NOK (million)	Type	% of total (in energy)	% of total
1.	PetroChina	826	Petro	Petro: 71.57%	11.16%
2.	China Petroleum and Chemical Corp. (Sinopec)	316	Petro		
3.	China Shenhua	238	Coal	Coal: 27,50%	4.14%
4.	China Coal	108	Coal		
5.	Yanzhou Coal Mining	40	Coal		
6.	Inner Mongolia Yitai Coal	26	Coal		
7.	Kailuan Clean Coal**	21	Coal		
8.	Sinopec Shanghai Petrochemical	21	Petro	<i>incl above</i>	<i>incl above</i>
9.	JA Solar Holdings	15	Solar	RE: 0.92%	0.13%
10.	Shanxi Lu'an Environmental Energy Develop.	14	Coal	<i>incl above</i>	<i>incl above</i>
TOTAL (= US\$ 230m)		1 625		99.9%	15.43%
*This does not include electricity providers					
** 'Clean coal' in this case refers to the high quality of the coal and not application of clean coal technologies.					
Note: The Fund's holdings in China Oilfield Services are not included in this table, as the company is mainly a service provider.					

2.4 The Fund's holdings in green companies

Besides JA Solar there are two other companies that may be identified as 'green' or clean tech companies. The two companies are:

23. BYD Co Ltd –130,162,337 NOK

BYD – Build Your Dreams - is a Chinese manufacturer that produces many of the world's cell phone batteries and began selling cars in 2003. It is a frontrunner in production of rechargeable batteries and electric cars, and has ambition to become the world's largest automaker by 2025. BYD started selling a plug-in hybrid vehicle in China in 2008, a year before Toyota plans to introduce its plug-in vehicle and two years before Chevrolet's Volt is scheduled to go on sale. MidAmerican and investor guru Warren Buffet made headlines when they purchased 10% of BYD in September 2008.

171. Tianjin Capital Environmental Protection Group Co Ltd 5,001,701 NOK

Main activities are designing, managing, operating, and providing technological consultation of sewage water treatment plants.

The total value of the Norwegian Government Pension Fund holdings in Chinese Clean Tech companies in 2008 was NOK 149,838,455 (US\$21.2 million). In 2007, the Fund only invested in one easily identifiable clean tech company, Bio-Treat Technology Ltd., with holdings worth NOK 2,719,000 (US\$0.5 million) by end of 2007. The Fund disinvested in this company in 2008.

The Norwegian Government Pension Fund also had holdings worth close to NOK 3 million in China Yangtze Power Co. A which is involved in the controversial Three Gorges Dam project.³⁵

³⁵ The Three Gorges dam is the world's largest electric hydropower station with a full capacity of 22,500MW to be reached by 2011. The dam controls flooding, enhances navigation, and provides a vast amount of clean electricity. It

In this study China Yangtze Power Co. A is not considered an example of a clean tech company, in the same manner as we did not above count mainly coal-based electricity companies as coal companies.

Norway's Sovereign Wealth Fund in China: Holdings in Energy Sectors	2007 (NOK)	2008 (NOK)	Number of companies 2008
Coal	757m	447m	6
Petroleum	134m	1,205m	4
Fossil fuels (coal + petroleum)	891m	1,652m	10
Renewable Energy	-	14m	1

NB: This overview does not include electricity providers.

2.5 Perspective: An overview of the Fund's energy holdings in India

In order to assess how representative the Fund's energy generation related holdings in China are for its investment profile in emerging economies, we will also present a brief overview of the profile of the Fund's energy generation related holdings in India. At the end of 2008, the Fund had holdings in India in 14 easily identifiable fossil fuel companies (mostly oil and gas) and in 3 Indian renewable energy companies.

The identified fossil fuel companies are: Bharat Petroleum Corp, Bongaigaon Refinery & Chemicals, Chennai Petroleum Corp, Essai Oil, Gujarat NRE Coke, Hindustan oil Exploration, Hindustan Petroleum Corp, Indian Oil Corp, Indraprastha Gas, Mangalore Refinery and Petrochemicals, Monnet Ispet & Energy, Oil and Natural Gas Corp, Reliance Petroleum and Reliance Power³⁶. The Fund's total holdings in Indian fossil fuel companies in 2008 were approximately US\$83.6 million (NOK 0.59 billion). The largest holding was in Oil & Natural Gas Corp with NOK 189,481,406.

The identified renewable energy companies are: Jaiprakash Hydropower, Moser Baer India (which has a solar PV division) and Suzlon Energy (wind power). The total holdings in Indian renewable energy companies were US\$4.9 million (NOK 34.5 million). The largest holding was in Suzlon Energy with NOK 24,077,121.

The Fund's holdings were less slanted towards fossil fuels in India than in China in 2008. In China, the Fund invested 118 times more in fossil fuels than in renewable energy, while in India the Fund invested 17 times more in fossil fuels that year. In India the Fund is also much less engaged in the coal sector, with only one holding of NOK 8.6 million in Gujarat NRE Coke. 94% of the Fund's energy investments in India were in coal, oil, oil and natural gas.

“We're in autumn,” Tripitaka said, “yet it is so hot. Why does the heat feel so intense?”
 “Maybe the climate's out of sorts,” Sandy said.

Spoken as the monk Xuánzàng (also called Tripitaka) and his disciples approach a burning (coal?) mountain on their journey in search for wisdom. From *Journey to the West* (西游记), by Wu Cheng-en (ca. 1590).

has, however, also flooded archaeological and cultural sites, displaced more than 1.4 million people, and is causing dramatic ecological changes. (Shi Jingtao: ‘100b yuan outlay to cope with dam impact’ and ‘Three Gorges slope fuels landslide fears’, in South China Morning Post, April 9, 2009.)

³⁶ Reliance Power runs facilities with a total capacity of 28.2GW, mainly coal (14.6GW) and gas (10.3GW).

3. Analysis and suggestions

3.1 The reality of climate change and Norway's response

Man-made climate change is not a passing trend. According to the scientific consensus, the current development trajectory constitutes a threat to current life forms on planet earth on the scale of nuclear holocaust or the Cretaceous–Tertiary extinction event 65 million years ago which led to large-scale mass extinction of animal and plant species and the disappearance of the ruling dinosaurs.³⁷ Climate change and the wide range of detrimental and destabilizing effects it increasingly causes as average temperatures keep climbing, is already imposing huge costs and is an enormous threat to the world economy and its ability to provide services and wealth generation in the future.

The Fund is Norway's most important foreign policy tool. Where the Fund's money is placed has an effect. The size of the Fund's investments in OECD countries and the emerging economies dwarfs any development or cooperation programs the Norwegian Government may engage in. Norway's real role in the world and contribution to tackling global challenges such as climate change, is therefore largely determined by where Norway invests its money.

3.2 Responsible investment in the 21st Century

In the 21st century it is not enough that so-called ethical guidelines for investments helps avoiding or improving the worst of companies in terms of environmental and social standards. The real ethical challenge for OECD countries is to instigate *systemic change* that can make welfare possible, also in developing countries, within the limits of one planet, and spare billions of people in the third world from the most devastating of the global warming scenarios of the IPCC.³⁸ Managers of large pension funds or similar assets could make low-risk, strategic investments in drivers for sustainable development; the companies and sectors that are aiming to serve the needs of the global population in a low-carbon, sustainable manner. This would be to invest in long-term stability and security that may ensure return on investments for many generations to come.

In 2008 the Fund lost all the profit made over a decade.³⁹ The Fund had invested broadly in a large number of companies in almost every sector, allowing it to spread risk and grow on the broad back of the general development of the global economy. The financial crisis and the plunging global markets demonstrated that as an investor there is no choice but to independently take basic strategic parameters into account if a return on investments is to be ensured in the long term – even a century or more as in the case of the Fund. The emerging ecological credit crunch and climate change constitute such parameters.

The degree to which China and India will be able to decouple continued economic growth from fossil fuel intensity will be decisive in reducing emissions of CO₂ by more than half by 2050. The IEA estimates the additional investment needs in clean energy technologies and energy efficiency

³⁷ A scientific article in *Nature* in 2004 presented a study estimating that 1 million species might go extinct by 2050 because of climate changes (source: C.D. Thomas et al., 2004, Extinction risk from climate change, *Nature*, vol 427).

³⁸ This paragraph is slightly adapted from Reinvang & Peters: *Norwegian Consumption, Chinese Pollution*, WWF & Norwegian University of Science and Technology 2008.

³⁹ It should be noted that the Fund has not sold its holdings and thus not realized the losses. If global markets pick up which is not unlikely, parts or all of the loss will be redeemed.

globally to be 18 times the current level of investment in these areas. In China the need for a shift in investments will be even higher. Few stakeholders are in as good a position to help leverage the shift within energy sector investment than sovereign wealth funds and pension funds, which have long-term investment horizons and huge assets. The positive side is that China and India has the dynamism and scale to enable a large scale clean energy revolution if the right investments are made.

3.3 Norway's political goals and investments – must they be worlds apart?

It is a paradoxical situation that the Norwegian government's own investment fund is investing in businesses engaged in forms of development that run counter to the government's political goals. On climate policy, priority areas such as preserving the world's rainforests and clean energy in China, the Fund is investing much larger amounts in an unsustainable business-as-usual scenario than the government is investing over the state budget to try to trigger real change. This derides the investments made by Norwegian tax payers to solve critical global issues as well as the policy goals of the political parties supported by a majority of the Norwegian population.

In 2008, Norway provided NOK 40 million in 2008 to clean energy and environment projects in China. The Fund invested NOK 14 million in renewable energy and NOK 1.65 *billion* in coal and petroleum energy solutions without carbon capture and storage. More than 99% of the Fund's investments in energy solutions went to traditional fossil fuels. The Funds investments in fossil fuels were 118 times higher than the investments in renewable energy. This takes place at a time when the renewable energy sector in China is booming, providing good opportunities for sound investments.

There are nuances in this picture. The Fund generally invests in the large Chinese fossil fuel companies. China is taking steps to clean up its dangerous coal industry, shutting down smaller and less effective power plants and illegal mines. This is also reducing the CO₂ emissions per unit coal. The Fund can be said to generally support this development through its investments and thus contributing to reduced emissions per unit. Yet, the only real solution in the CO₂-intensive Chinese coal industry is clean coal technology. If the Fund is to invest in coal in China at all, it should confine itself to the few companies and joint ventures concentrating on developing clean coal technology. The Fund is not doing that at present.

“Passive management is not an option for a fund as big as ours. We cannot be a free rider leaving evaluation of the correct pricing of the companies we engage in to others. We must develop competence concerning the markets in which we engage. I believe the Norwegian people want us to know what we are investing in, and not just blindly follow indices.”

Yngve Slyngstad, Executive Director, Norway's Government Pension Fund.
(Quote translated into English from interview article in *Dagens Næringsliv*, 28 March 2009.)

3.4 Investing profitably for the Future

The Fund's ethical guidelines emphasize that in the long term a sound return is contingent on sustainable development in the economic, environmental and social sense. They also maintain that the Fund shall not make investments which constitute an unacceptable risk that may contribute to unethical acts or omissions, such as severe environmental damage. To invest overwhelmingly in traditional coal and fossil fuels as energy solutions in China obviously involves a risk whereby the Fund does contribute to severe environmental damage. (We will not discuss the approximately 820 people who died in the legal Chinese coal industry in 2008.) A clear problem with the Fund's groundbreaking ethical guidelines seems to be that the overall ethical goals have not been translated into practical tools guiding manager's day-to-day investment decisions. This should not just mean abstaining from potential return from investing in worst-in-class companies. Rather, the main focus ought to be on actively exploring the interface between sound financial return and companies contributing to increasingly make sustainable development possible. And this could well be a very profitable investment strategy.

The Fund's investments in the solar company JA Solar Holdings, electric car developer BYD and Tianjin Capital Environmental Protection Group, show that the Fund's managers are becoming aware of the positive investment potential of the rapidly developing Chinese clean tech sector. This is positive. It is the scale and range of the investment in clean energy and environmental technology that is disappointing. BYD is the only large green Chinese company in which the Fund invests. Where are Chinese renewable energy locomotives such as windmill producers Goldwind and Sinovel, who have more than 50 per cent of the world's fastest growing wind market (China) and are about to start exporting to OECD countries with tough renewable energy targets to reach? Where are Suntech and Yingli Green Energy, two of the largest solar panel exporters in the world, who are now well positioned to reap from an emerging domestic market for solar energy in China?

The Fund is clearly under-investing in renewable energy in China and India compared with its engagement in the coal and petroleum sectors. In a long-term perspective, this may well mean that potential for significant returns on investment is missed for Norway. Fossil fuels are a limited resource. Renewable energy will be around indefinitely. In this perspective, investing in emerging renewable energy giants in what may soon be the world's largest and most rapid developing renewable energy markets should make long-term financial sense.

3.5 Leadership yes, but still quite not there

The Norwegian government's recently proposed new measures to address climate change do testify to leadership. We will not here discuss further the positive new engagement strategy or the proposed study on the effect of climate change on financial markets.

The Norwegian government is still overlooking the opportunity to introduce positive screening by sector. The new environmental programme is very positive (see below), but it must be noted that as long as the programme is not complementing a positive screening of the whole portfolio it will remain an add-on to a portfolio tending to underpin business-as-usual and thereby, in many cases, unsustainable business practice.

Positive screening is a tool that probably to a large extent could solve the embarrassing situation where the Fund's investments in companies engaged in practises that run counter to Norwegian sustainable development goals dwarf the Norwegian government's state budget allocations to reach those goals. Conventional coal and the controversial Chinese petroleum company, Sinopec, are examples that possibly would be filtered-out by positive screening. The Dutch pension funds ABP and Californian CalPERS are applying positive screening, showing that it can be done on this level.⁴⁰

Norges Bank's scepticism to positive screening and separate environmental funds seem to reflect a view that financial management is most effective if it is 'pure' and leaves politics to legislators and others who determine framework conditions for the market. But funds do not exist in a vacuum. The Fund is the world's second largest sovereign wealth fund and where it channels its resources has implications. Not applying investment policies or guidelines will often mean supporting a status quo representing an unsustainable development trajectory. This is possibly nowhere more clear than in China, where a lack of operational guidelines for follow-up of the ethical goals of the Fund has allowed the Fund's energy investment profile to be 99% in fossil fuels without carbon capture and storage. Subsequently, the Fund pays less attention to clean energy in China than not only the Norwegian government, but also less than the Chinese government.

If Norway is serious about promoting a transition to a clean energy future, the Fund could reconsider its whole portfolio of energy investments. Firstly, the Fund could abstain from investing in fossil fuel companies which do not have a strong focus on transforming into clean energy companies in the foreseeable future. There is also a financial argument. As the Fund is based on petroleum revenues, there is a lesser risk of being hit by a lower profitability in the petroleum sector if the fund invested systematically in sectors that would thrive in such a scenario (i.e. clean energy).⁴¹

The petroleum sector is still much larger than the renewable energy sector. This effectively means that if the Fund invests similar amounts in the petroleum and renewable energy sectors, the potential impact on the sector will be larger in the renewable energy sector as the share of total investments will be higher. Investing in sound renewable energy companies globally is therefore a good strategy to make an impact on the future global energy infrastructure.

The Fund could also signal that it will consider disclosure of CO₂ emissions through the Carbon Disclosure Project, or any similar recognized instrument adhering to the Greenhouse Gas Protocol Initiative methodology, an important proxy for risk management and a part of companies' obligation to disclose environmental information. Today, even many of the largest companies in the world do not know how much or where in their business structure most of their greenhouse gas emissions are generated.

⁴⁰ Also hit by the financial crisis, ABP had a negative return on investment in 2008 of -20.2%. This was almost as bad as the Fund's 23.3%. CalPERS financial year is 1 July – 30 June.

⁴¹ Professor Ragnar Torvik (2007) of the Norwegian University of Science and Technology made the point that in order to hedge its risks the Fund should invest in sectors that will counter-balance down cycles in the oil sector.

3.6 The new environmental and emerging markets programme

The Norwegian government's new US\$3 billion five-year environmental programme provides an important and interesting new aspect to the Fund. The allowance of lower short-term profit margins and the venture capital aspects of early market engagement will make this a very interesting tool to follow. The 'possible investment programme aimed at sustainable growth in emerging markets' is especially interesting in light of this survey. As the Fund's investment volumes in countries like China and India are still comparatively modest (although growing), this allows for a clear and distinctive investment profile. The overall analysis of the challenges and opportunities of China, which are also largely applicable to India as described earlier in this study, serve as the basis for the following suggestions.

Reflecting a clear Norwegian commitment to global sustainable and equitable development, the Fund's total investments in China and India could be carried out as part of a distinctive programme focusing exclusively on clean technology with a mixture of more regular investments and venture capital investment. This would mean shifting the existing holdings in China and India into clean technology companies, avoiding contradictory engagement such as described in this survey and boosting the volume of the programme. This programme could learn from Singapore's Temasek, which has a mandate to buy whole companies and/or shares that gives real influence on business models and strategies.⁴² That would require developing a huge knowledge base on the clean tech sector in emerging economies. This would probably make the programme's secretariat an attractive international work place for socially-conscious and forward-looking professionals in the industry.

The Fund's office in Shanghai could be developed into a 'Brundtland Sustainable Development Investment Centre'⁴³ managing the Fund's sustainability programme for emerging markets, drawing on existing expertise and recruiting from the innovative clean tech investment milieu in Asia. The centre could also look into promoting synergies between the clean tech sectors in emerging economies. The business culture and competitive advantages of the Chinese and Indian economies are, for instance, in many ways complementary, with a potential for scaling up a global clean revolution even more rapidly through Sino-Indian cooperation on low carbon development.

3.7 Looking to Norway's future

Norway possesses a number of preconditions conducive to taking a strong lead on socially responsible investment in the global investor landscape. Norwegian politicians ought to also consider the brand value of a progressive management of the Fund and developing a competence milieu for the future in Norway. Important elements include the following:

- Norway is a wealthy and well-functioning democracy with a well-educated population and with ambitious policy goals for tackling climate change and promoting global sustainable development.

⁴² Temasek Holdings is an Asia investment house headquartered in Singapore. Temasek manages a portfolio with a net value of about US\$134 billion (May 2009), weighted towards Singapore and Asia.

⁴³ Gro Harlem Brundtland is the former Norwegian Prime Minister who led the work on the UN report *Our Common Future* (1987), which put sustainable development on the international political agenda.

- The Fund is based on revenues from extraction of petroleum, the use of which is a main cause for global warming threatening globally sustainable development and particularly the livelihoods of the world's poor. The source of the revenue poses an ethical challenge that calls for a clear and visible response.
- Norway is a European country which is not a member of the EU and has no colonial history. This provides a good position from which to take a lead and be a driver for supporting global sustainable development in the international investment community.
- Norway is a small country outside the major Western political blocks. Norway is therefore dependent on being innovative and developing specific niches, if it is to be influential in international politics.
- Norway's petroleum extraction has already peaked. Norway is a high-cost society. In a future increasingly knowledge based economy Norway must find niches in order to stay relevant and competitive in the global economy. Fostering a cutting-edge financial milieu can be such a niche. How to handle money responsibly may well be a main skill upon which Norway may capitalize in the future.

We have already provided recommendations for the follow-up of the recently introduced initiatives to increase the Fund's engagement related to climate change and emerging economies, and we have recommended that the Fund introduces positive screening by sector. The following are further suggestions that could help the Fund to become a world leader in socially responsible funds management, and at the same time provide Norway with an important global role:

- The programmes for environmental investments and sustainable development investment in emerging economies could be used actively in the Fund's continuous development of responsible management in the Fund. This would require developing a proper knowledge base in Norway on the commercial clean technology sector and of the systemic challenges and drivers for sustainable development in the global market.
- Norway could centre the responsibility and management of the increasing sustainable development investment portfolio in a green office tower centrally placed in Oslo, with a name such as 'Brundtland Sustainable Development Investment Tower'. This would put Norway on the map as the 'sustainable investment capital of the world' and attract socially-conscious and forward-looking professionals in the industry.
- The Norwegian Government could consider holding an annual international conference on 'Sustainable Funds Management in the 21st Century' in Oslo. This will provide a forum for sharing of best practices and mainstreaming socially responsible investment in SWFs and public pension funds, and help brand Oslo as 'sustainable investment capital of the world'.

Making the Fund truly 'the best managed fund in the world' and Oslo 'the sustainable investment capital of the world', would not only help secure Norwegian investments in a long-term perspective, it would also provide Norway with cutting-edge competence on the developments forming the future global economy. Finally, it would make the Fund the most important tool for realising the Norwegian Government's ambitious goals of promoting global sustainable development and tackling climate change.

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Appendix 1: The Fund's Ethical Guidelines

This translation is retrieved from the Norwegian Ministry of Finance's website 6.5.09.⁴⁴ The webpage notes: This translation is for information purposes only. Legal authenticity remains with the original Norwegian version.

The Norwegian Government Pension Fund - Global

Issued 22 December 2005 pursuant to regulation on the Management of the Government pension Fund - Global, former regulation on the Management of the Government Petroleum Fund issued 19 November 2004.

1 Basis

The ethical guidelines for the Government Pension Fund – Global are based on two premises:

- *The Government Pension Fund – Global* is an instrument for ensuring that a reasonable portion of the country's petroleum wealth benefits future generations. The financial wealth must be managed so as to generate a sound return in the long term, which is contingent on sustainable development in the economic, environmental and social sense. The financial interests of the Fund shall be strengthened by using the Fund's ownership interests to promote such sustainable development.
- *The Government Pension Fund – Global* should not make investments which constitute an unacceptable risk that the Fund may contribute to unethical acts or omissions, such as violations of fundamental humanitarian principles, serious violations of human rights, gross corruption or severe environmental damages.

2 Mechanisms

The ethical basis for the Government Pension Fund – Global shall be promoted through the following three measures:

- *Exercise of ownership rights* in order to promote long-term financial returns, based on the UN Global Compact and the OECD Guidelines for Corporate Governance and for Multinational Enterprises.
- *Negative screening* of companies from the investment universe that either themselves, or through entities they control, produce weapons that through normal use may violate fundamental humanitarian principles.
- *Exclusion* of companies from the investment universe where there is considered to be an unacceptable risk of contributing to:
 - Serious or systematic human rights violations, such as murder, torture, deprivation of liberty, forced labour, the worst forms of child labour and other child exploitation
 - Serious violations of individuals' rights in situations of war or conflict
 - Severe environmental damages
 - Gross corruption
 - Other particularly serious violations of fundamental ethical norms.

⁴⁴ <http://www.regjeringen.no/en/dep/fin/Selected-topics/The-Government-Pension-Fund/Ethical-Guidelines-for-the-Government-Pension-Fund---Global-/the-ethical-guidelines.html?id=434894>

3 The exercise of ownership rights

3.1

The overall objective of Norges Bank's exercise of ownership rights for the *Government Pension Fund – Global* is to safeguard the Fund's financial interests. The exercise of ownership rights shall be based on a long-term horizon for the Fund's investments and broad investment diversification in the markets that are included in the investment universe. The exercise of ownership rights shall mainly be based on the UN's Global Compact and the OECD Guidelines for Corporate Governance and for Multinational Enterprises. Norges Bank's internal guidelines for the exercise of ownership rights shall stipulate how these principles are integrated in the ownership strategy.

3.2

Norges Bank shall report on its exercise of ownership rights in connection with its ordinary annual reporting. An account shall be provided of how the Bank has acted as owner representative – including a description of the work to promote special interests relating to the long-term horizon and diversification of investments in accordance with Section 3.1.

3.3

Norges Bank may delegate the exercise of ownership rights pursuant to these guidelines to external managers.

4 Negative screening and exclusion

4.1

The Ministry of Finance shall, based on recommendations of the Council on Ethics for the *Government Pension Fund – Global*, make decisions on negative screening and exclusion of companies from the investment universe.

The recommendations and decisions shall be made public. The Ministry may, in certain cases, postpone the time of public disclosure if this is deemed necessary in order to ensure a financially sound implementation of the exclusion of the company concerned.

4.2

The Council on Ethics for the *Government Pension Fund – Global* shall consist of five members. The Council shall have its own secretariat. The Council shall submit an annual report on its activities to the Ministry of Finance.

4.3

Upon request of the Ministry of Finance, the Council issues recommendations on whether an investment may constitute a violation of Norway's obligations under international law.

4.4

The Council shall issue recommendations on negative screening of companies that:

- produce weapons that through their normal use violate fundamental humanitarian principles;
- or

- sell weapons or military materiel to states mentioned in Clause 3.2 of the supplementary guidelines for the management of the Fund.

The Council shall issue recommendations on the exclusion of companies from the investment universe because of acts or omissions that constitute an unacceptable risk of the Fund contributing to:

- serious or systematic human rights violations, such as murder, torture, deprivation of liberty, forced labour, the worst forms of child labour and other forms of child exploitation,
- serious violations of individuals' rights in situations of war or conflict,
- severe environmental damages,
- gross corruption; or
- other particularly serious violations of fundamental ethical norms.

The Council shall raise issues under this provision on its own initiative or at the request of the Ministry of Finance.

4.5

The Council shall gather all necessary information at its own discretion and shall ensure that the matter is documented as fully as possible before making a recommendation regarding negative screening or exclusion from the investment universe. The Council may request Norges Bank to provide information as to how specific companies are dealt with in the exercise of ownership rights. Enquiries to such companies shall be channelled through Norges Bank. If the Council is considering recommending exclusion of a company, the company in question shall receive the draft recommendation and the reasons for it, for comment.

4.6

The Council shall review on a regular basis whether the reasons for exclusion still apply and may against the background of new information recommend that the Ministry of Finance revoke a decision to exclude a company.

4.7

Norges Bank shall receive immediate notification of the decisions made by the Ministry of Finance in connection with the Council's recommendations. The Ministry of Finance may request that Norges Bank inform the companies concerned of the decisions taken by the Ministry and the reasons for the decision.

Appendix 2: The Fund's portfolio in China 31.12.2008.

1. Advanced Semiconductor Manufacturing Corp – IT
2. Air China Ltd – airline company
3. AirMedia Group Inc – sells commercial onboard planes
4. Aluminum Corp of China - world's 2 nd largest alumina producer and 3 rd largest primary aluminium producer.
5. Angang Steel Co Ltd - production and sale of steel products
6. Anhui Conch Cement Co Ltd – cement production
7. Anhui Expressway Co - holding, operation and development of toll expressways and highways in Anhui
8. Asia Cement China Holdings Corp - manufacturing and selling of cement products and concrete
9. AviChina Industry & Technology Co – Production of Automotives
10. Baidu.com – internet portal
11. Bank of China Ltd – banking
12. Bank of Communications Co Ltd – banking
13. Baoshan Iron & Steel Co Ltd – steelmaker
14. Baoye Group Co Ltd - construction services
15. Beijing Capital International Airport Co – Airport
16. Beijing Capital Land Ltd - real estate
17. Beijing Hualian Hypermarket - operation of supermarkets and department stores
18. Beijing Jingkelong Co Ltd - retailing and wholesaling
19. Beijing North Star Co - real estate
20. Beijing Shunxin Agriculture Co – food production
21. Bengang Steel Plates Co - manufacturing and processing of steel
22. BOE Technology Group Co Ltd – computer manufacturer
23. Byd Co Ltd - researching, developing, manufacturing and selling of rechargeable batteries and electronic cars
24. BYD Electronic International Co Ltd – production of mobile components
25. Central China Real Estate - real estate
26. Changsha Zoomlion Heavy Industry Science and Technology Development - construction machinery industry
27. China BlueChemical - production and sale of compound fertilizers and methanol
28. China Citic Bank-banking
29. China Coal Energy Co – coal production
30. China Communications Construction Co Ltd – construction
31. China Communications Services Corp Ltd - telecommunications support services
32. China Construction Bank Corp – banking
33. China COSCO Holdings Co Ltd – shipping
34. China CYTS Tours Holding Co - tourism business and high science and technology products
35. China Dongxiang Group Co - branded sports wear
36. China Eastern Airlines – Airline
37. China Enterprise Co Ltd - real estate property, construction material travel and catering services.
38. China Fiberglass Co Ltd - research, production and sale of fiberglass and construction plastic floorboards
39. China International Marine Containers Co Ltd - containers, road transportation vehicles, industrial equipment
40. China Life Insurance Co Ltd – insurance
41. China Medical Technologies Inc - medical device company
42. China Merchants Bank Co Ltd - bankink
43. China Merchants Property Development Co Ltd – real estate
44. China Minsheng Banking Corp Ltd - banking
45. China Molybdenum Co Ltd - mining, smelting, renovation and manufacture of molybdenum products
46. China National Building Material Co Ltd - building material
47. China National Medicines Corp Ltd - Production And Distribution of Medicine
48. China Oil field Services Ltd - provision of oilfield services including drilling services, well services, etc
49. China Petroleum & Chemical Corp - refiner and petrochemical producer
50. China Railway Construction Corp - world's seventh largest construction contractor
51. China Railway Group Ltd – railway
52. China Railway Tielong Container Logistics Co Ltd - provider of railway transportation services

53. China Resources Microelectronics Ltd
54. China Shenhua Energy Co Ltd – Coal production
55. China Shipping Container Lines Co Ltd - fastest growing and world leading major container shipping company
56. China Shipping Development Co Ltd – shipping
57. China South Locomotive and Rolling Stock Corp – production and sale of railway locomotives etc
58. China Southern Airlines Co Ltd – airline
59. China Telecom Corp Ltd – Telecommunication
60. China United Telecommunications Corp Ltd – Telecommunication
61. China Vanke Co Ltd – real estate
62. China Yangtze Power Co A - China's largest listed hydropower corporation, involved in the Three Gorges Dam
63. Chongqing Iron & Steel Co Ltd - iron and steel manufacturing state-owned enterprise
64. Citic Securities Co Ltd/China - securities brokerage and advisory company
65. CNinsure Inc – insurance
66. CSG Holding Co Ltd - mainly engaged in the glass industry
67. Ctrip.com International Ltd - travel service provider
68. Dalian Port PDA Co Ltd - port business
69. Dalian Zhangzidao Fishery Group - aqua-culturing, processing and selling of marine products
70. Daqin Railway Co Ltd - providing railway transportation services of coal
71. Dashang Group Co Ltd - wholesaling, retailing, processing and storing agricultural and consumer products
72. Datang International Power Generation Co Ltd – power production
73. Dazhong Transportation Group Co Ltd - urban passenger transport via buses and taxi cabs
74. Dongfang Electric Corp Ltd - production and sale of power generating equipment
75. Dongfeng Motor Group Co Ltd – motor production
76. Double Coin Holdings Ltd - manufacturing and selling of various types of rubber tyres
77. Eastcom Peace Smart Card Co Ltd - sales of smart cards and associated products
78. Financial Street Holding Co Ltd - real estate
79. First Tractor Co - manufacture and sale of agricultural machinery
80. Focus Media Holding Ltd - operates out-of-home advertising network
81. Fujian Longxi Bearing Group Co Ltd - bearing supplier
82. Fuyao Group Glass Industries Co Ltd - manufacture of glass
83. Golden Meditech Co Ltd - developing , manufacturing and selling of medical devices
84. Great Wall Motor Co Ltd - largest privately owned automotive manufacturer in China
85. Gree Electric Appliances Inc – air condition producer
86. Guangdong Electric Power Development Co Ltd – electric power production
87. Guangdong Provincial Expressway Development Co Ltd – development+operation of expressways and bridges.
88. Guangshen Railway Co Ltd - Operation of a railway, provision of catering service, travel services, hotels
89. Guangzhou Baiyun International Airport Co Ltd - airport
90. Guangzhou Pharmaceutical Co Ltd - manufacturing and sale of Chinese patent medicine
91. Guangzhou R&F Properties Co Ltd - real estate
92. Guangzhou Shipyard International Co Ltd - integrated shipbuilding
93. Hainan Airlines Co Ltd – airlines
94. Haitian International Holdings Ltd - manufacturing and trading of plastic injection moulding machines
95. Hangzhou Steam Turbine Co - manufacturing and sell industrial steam turbines and other industrial equipment
96. Harbin Power Equipment Co Ltd - manufacture of power equipment
97. Henan Shuanghui Investment & Development Co Ltd - meat products provider
98. Huadian Power International Co – power production
99. Huaneng Power International Inc – power production
100. Huangshan Tourism Development Co Ltd – tourism services
101. Huaxin Cement Co Ltd – cement
102. Hunan Huatian Great Hotel Co Ltd - managing hotels, restaurants, recreation facilities and entertainment.
103. Hunan Non-Ferrous Metal Corp Ltd - production of nonferrous metals including tungsten, zinc, antimony, lead,
104. Hunan Valin Steel Tube and Wire Co Ltd - processing and selling smelted steel
105. Industrial & Commercial Bank of China - banking
106. Industrial Bank Co Ltd – banking

107. Inner Mongolia Eerduosi Cashmere Products Co Ltd - manufacture and sale of cashmere products.
108.Inner Mongolia Yitai Coal Co - coal producing, carrying, selling
109. JA Solar Holdings Co Ltd - solar photovoltaic products.
110.Jiangsu Expressway Co Ltd - Construction, maintenance and management of expressway manufacturing
111.Jiangsu Jiangnan High Polymer Fiber Co Ltd - manufacture and sale of polyester fiber
112.Jiangsu Kanion Pharmaceutical Co Ltd - manufacture and sale of Chinese pharmaceutical products
113.Jiangsu Xincheng Real Estate Co Ltd - real estate
114.Jiangxi Copper Co Ltd - copper mining, milling, smelting and refining to produce copper cathode
115.Jilin Sino-Microelectronics Co Ltd – electronic components
116.Kailuan Clean Coal Co Ltd – see study
117.Keda Industrial Co Ltd – production of machinery
118.Kweichow Moutai Co Ltd – alcohol production
119.Lianhua Supermarket Holdings Co Ltd - supermarket holding
120.Lingbao Gold Co Ltd - smelting, mining, processing, sales of gold and other metallic products
121.Luthai Textile Co Ltd – textile production
122.Mayinglong Pharmaceutical Group Co Ltd - pharmaceutical manufacturer & exporter
123.Memtech International Ltd - manufacturing and selling customized precision molded products
124.Mindray Medical International Ltd - manufacturer and exporter of medical devices
125.Maanshan Iron & Steel - manufacture and sale of iron and steel products
126.Netease.com - internet and online game services providers
127.Neusoft Corp - offshore software & services outsourcing provider
128. New Oriental Education & Technology Group – education and training services
129.Ningbo Donly Transmission Equipment Co Ltd - manufacture and distribution of motors and gearboxes
130.Offshore Oil Engineering Co - designing, fabricating, installing, repairing offshore platform
131.PetroChina Co Ltd – China's biggest producer and seller of petroleum
132.PICC Property & Casualty Co Ltd - insurance
133.Ping An Insurance Group Co of China Ltd – insurance
134.Qingdao Haier Co Ltd - manufacture and sale of household electrical appliances
135.Qinghai Salt Lake Potash A - developing, producing, selling and operating chlorine potassium
136.Renhe Commercial Holdings Co Ltd - wholesale and retail sales of apparel and accessories
137.SAIC Motor Corp Ltd – motor production
138.Shandong Chenming Paper Holdings Ltd - paper making
139.Shandong Dong-E E-Jiao-A – medicine
140.Shandong Gold Mining Co Ltd - prospecting, mining, selecting and smelting gold
141.Shandong Pharmaceutical Glass Co Ltd - Pharmaceutical Glass manufacturing
142.Shandong Weigao Group Medical Polymer Co Ltd - production and sale of single use medical consumables
143.Shanghai Bailian Group Co - operation and management of department stores and supermarkets
144.Shanghai Electric Group Co Ltd - manufacture and sale of products of power equipment
145.Shanghai Forte Land Co - real estate
146.Shanghai Fosun Pharmaceutical Group Co Ltd – Pharmaceutical products
147.Shanghai International Airport Co Ltd – airport
148.Shanghai International Port Group Co Ltd – operator of ports in Shanghai
149.Shanghai Jinfeng Wine Co Ltd - sale of food and the manufacture of yellow wine and sugar
150.Shanghai Kehua Bio-Engineering Co Ltd - producing, manufacturing and selling of biological products
151.Shanghai Lujiazui Finance & Trade Zone Development Co Ltd - real estate
152.Shanghai Mechanical and Electrical Industry Co Ltd - production and sale of heavy machinery
153.Shanghai New World Co Ltd - shopping, entertainment, hotels and restaurant services
154.Shanghai Pudong Development Bank – banking
155.Shanghai Tunnel Engineering Co Ltd – construction of tunnels and underground structures
156.Shanghai Zhangjiang High-Tech Park Development Co Ltd - developing and operating property
157.Shanghai Zhenhua Port Machinery Co - Manufacturer of cranes and large steel structures
158.Shanghai Zhixin Electric Co LtdChina Oilfield Services Ltd - development of high-tech products
159.Shanxi Lu'an Environmental Energy Development Co Ltd – coal production
160.Shenyang Chemical Industry - chemical products, petrochemical products, chemical machinery equipment, etc

161. Shenzhen Agricultural Products Co Ltd - agricultural product wholesale markets
162. Shenzhen Chiwan Wharf Holdings Ltd - Harbor related services, Transportation services and Logistic services
163. Shenzhen Expressway Co Ltd - construction, operation and management of highways, expressways and bridges
164. Shenzhen Fiyta Holdings Ltd - production and sale of watches
165. Sinopec Shanghai Petrochemical Co Ltd - petrochemical company
166. Sinopec Yizheng Chemical Fibre Co Ltd - production and sale of polyester chips and polyester fibers
167. Sinotrans Ltd – transportation
168. Suning Appliance Co Ltd - operates franchised retail shops of electronics appliances
169. Suzhou New District Hi-Tech Industrial Co Ltd – real estate
170. TBEA Co Ltd - manufacture and sale of transformers
171. Tianjin Capital Environmental Protection Group Co Ltd – see study
172. Tianjin Port Co Ltd – port operating
173. Tong Ren Tang Technologies Co Ltd - manufacture and sale of Chinese medicines.
174. Travelsky Technology Ltd - provider of information technology solutions for China air travel and tourism
175. Tsingtao Brewery Co - brewing and sale of beer
176. Uni-President China Holdings Ltd - processed food producer
177. Want Want China Holdings Ltd - processed food producer
178. Weichai Power Co Ltd – production of diesel engines
179. Weihai Guangtai Airport Equipment Co Ltd
180. Weiqiao Textile Co - production , sale and distribution of cotton yarn, grey fabric and denim.
181. Wuhan Zhongbai Group Co Ltd - operation of department stores
182. Wuliangye Yibin Co Ltd - manufacturing liquor and related products
183. Xiamen International Port Co Ltd – port services
184. Xiamen King Long Motor Co Ltd - manufacture and sale of passenger buses
185. Xinhua Finance Media Ltd – media producer/media group
186. Xining Special Steel Co - manufacture and sale of steel
187. Xinjiang Chalkis Co Ltd – ketchup producer
188. Xinjiang Guanghui Industry Co Ltd – finance
189. Xinjiang Joinworld Co Ltd - aluminium refining and processing, as well as new electronic material industries
190. Yantai Changyu Pioneer Wine Co - manufacture and sale of wine, brandy, champagne and alcoholic drinks
191. Yantai North Andre Juice Co – production of juice concentrate
192. Yantai Wanhua Polyurethanes Co Ltd - producing and selling polyurethane
193. Yanzhou Coal Mining Co Ltd - coal mining
194. Yueyang Paper Co Ltd - manufacture and distribution of paper pulp and paper products
195. Yunnan Baiyao Group Co Ltd - research, development and manufacture of pharmaceutical products
196. Yunnan Yunwei Co Ltd - subsidiaries, operates chemical fiber enterprise
197. Zhaojin Mining Industry Co Ltd – principally gold mining
198. Zhejiang Expressway Co Ltd - expressway managing
199. Zhejiang Guyuelongshan - manufacture and distribution of yellow wine
200. Zhengzhou Yutong Bus Co Ltd – bus
201. Zhong An Real Estate Ltd - real estate
202. Zhuzhou CSR Times Electric Co Ltd – electric equipment for locomotives
203. Zijin Mining Group Co Ltd – mining such as gold and copper
204. ZTE Corp - telecommunications equipment and network solutions

